

WHAT IS CLAIMED IS:

1. In a bi-directional remote communication system wherein a web-based remote expert data center is linked in remote communications with a programmer, the programmer being associated with at least one IMD, a system for remote invoicing of a medical component used in the implantable medical device upon implantation in a patient, the remote invoicing system comprising:

at least one medical component used in conjunction with the implantable medical device system implanted into the patient;  
a programmer capable of identifying each medical component implanted in the patient;  
a remote expert data center positioned at a distal location relative to the programmer;  
an interface between the programmer and the remote expert data center; and  
an invoice preparation module in data communication with the remote expert data center for receiving information identifying each medical component implanted in the patient and for preparing an invoice itemizing each medical component implanted in the patient.

2. The system of claim 1, wherein the medical component further comprises an implantable medical device.

3. The system of claim 2, wherein the implantable medical device further comprises a pacemaker.

4. The system of claim 2, wherein the implantable medical device further comprises a defibrillator.

5. The system of claim 1, wherein the medical component further comprises at least one lead used to connect an implantable medical device to the patient.

5 6. The system of claim 1, wherein the interface between the programmer and the remote expert data center further comprises a local area network communications link.

10 7. The system of claim 1, wherein the interface between the programmer and the remote expert data center further comprises an internet communications link.

15 8. The system of claim 1, wherein the interface between the programmer and the remote expert data center further comprises a telephone line communications link.

20 9. The system of claim 1, wherein the interface between the programmer and the remote expert data center further comprises a satellite communications link.

10. The system of claim 1, wherein the interface between the programmer and the remote expert data center further comprises a global positioning system communications link.

25 11. The system of claim 1, wherein the interface between the programmer and the remote expert data center further comprises at least two communication links selected from the group of communication links consisting of a local area network link, an internet link, a telephone line link, a satellite link, a global positioning system link, and a combination thereof.

30

12. The system of claim 1, wherein the invoice preparation module receives bar code information identifying the medical component implanted into the patient.

5

13. The system of claim 1, wherein the invoice preparation module receives serial number information identifying the medical component implanted into the patient.

10

14. The system of claim 1, wherein the invoice preparation module receives model number information identifying the medical component implanted into the patient.

15

15. The system of claim 1, and further comprising:  
an interface between the remote expert data center and a medical facility where the medical component is implanted into the patient for transmitting the invoice to the medical facility.

20

16. A system for maintaining inventory of a medical component of an implantable medical device system upon implantation in a patient, the system comprising:

25

at least one medical component used in conjunction with the implantable medical device system implanted in the patient;  
a programmer capable of identifying each medical component implanted in the patient;  
a remote expert data center positioned globally at a distal location relative to the programmer;  
an interface between the programmer and the remote expert data center; and

an inventory control module in data communication with the remote expert data center for receiving information identifying each medical component implanted in the patient and for updating an inventory module regarding inventory of each medical component implanted in the patient.

17. The system of claim 16, wherein the medical component further comprises an implantable medical device.

18. The system of claim 17, wherein the implantable medical device further comprises a pacemaker.

19. The system of claim 17, wherein the implantable medical device further comprises a defibrillator.

20. The system of claim 16, wherein the medical component further comprises at least one lead used to connect an implantable medical device to the patient.

21. The system of claim 16, wherein the interface between the programmer and the remote expert data center further comprises a local area network communications link.

22. The system of claim 16, wherein the interface between the programmer and the remote expert data center further comprises an internet communications link.

23. The system of claim 16, wherein the interface between the programmer and the remote expert data center further comprises a telephone line communications link.

24. The system of claim 17, wherein the interface between the programmer and the remote expert data center further comprises a satellite communications link.

25. The system of claim 17, wherein the interface between the programmer and the remote expert data center further comprises a global positioning system communications link.

26. The system of claim 17, wherein the interface between the programmer and the remote expert data center further comprises at least two communication links selected from the group of communication links consisting of a local area network link, an internet link, a telephone line link, a satellite link, a global positioning system link, and a combination thereof.

27. The system of claim 16, wherein the inventory control module receives bar coded information identifying the medical component implanted into the patient.

28. The system of claim 16, wherein the inventory control module receives serial number information identifying the medical component implanted into the patient.

29. The system of claim 16, wherein the inventory control module receives model number information identifying the medical component implanted into the patient.

30. A method of remote invoicing of a medical component of an implantable medical device system upon implantation in a patient, the method comprising the steps of:

initiating an interface between the implantable medical device system  
and an a remote expert data center located at a distal location  
relative the implantable medical device system;  
transmitting information identifying the medical component implanted in  
the patient to the remote expert data center; and  
preparing an invoice for the medical component in the remote expert  
data center based upon the transmitted information identifying  
the medical component.

31. The method of claim 30, wherein the step of transmitting information  
includes the further step of:

transmitting bar code information identifying the medical component  
implanted in the patient to the remote expert data center.

32. The method of claim 30, wherein the step of transmitting information  
includes the further step of:

transmitting serial number information identifying the medical  
component implanted in the patient to the remote expert data  
center.

33. The method of claim 30, wherein the step of transmitting information  
includes the further step of:

transmitting model number information identifying the medical  
component implanted in the patient to the remote expert data  
center.

34. The method of claim 30, and further including the step of comprising:  
transmitting location information regarding a location of the implant  
procedure to the remote expert data center.

35. The method of claim 30, and further including the step of comprising:  
transmitting operator information regarding an implanting physician to  
the remote expert data center.

5 36. The method of claim 30, and further including the step of comprising:  
transmitting timing information regarding a date and time of the  
implantation of the implantable medical device system to the  
remote expert data center.

10 37. The method of claim 30, and further including the step of comprising:  
transmitting an itemized bill to a medical facility where the implantation  
of the medical component occurred.

15 38. The method of claim 30, wherein the step of initiating an interface  
further including the step of comprises:  
initiating a local area network communications link between the  
implantable medical device system and the remote expert data  
center.

20 39. The method of claim 30, wherein the step of initiating an interface  
further including the step of comprises:  
initiating an internet communications link between the implantable  
medical device system and the remote expert data center.

25 40. The method of claim 30, wherein the step of initiating an interface  
further including the step of comprises:  
initiating a telephone line communications link between the implantable  
medical device system and the remote expert data center.

41. The method of claim 30, wherein the step of initiating an interface further including the step of comprises:

initiating a satellite communications link between the implantable medical device system and the remote expert data center.

5

42. The method of claim 30, wherein the step of initiating an interface further including the step of comprises:

initiating a global positioning system communications link between the implantable medical device system and the remote expert data center.

10

43. The method of claim 30, wherein the step of initiating an interface further including the step of comprises:

initiating at least two communications link between the programmer and the remote expert data center links selected from the group of communication links consisting of a local area network link, an internet link, a telephone line link, a satellite link, a global positioning system link, and a combination thereof.

15

44. A method of remotely controlling inventory of a medical component of an implantable medical device system upon implantation into a patient, the method comprising:

initiating an interface between the implantable medical device system and a remote expert data center located at a distal location relative to the implantable medical device system;

25

transmitting information identifying the medical component implanted into the patient to the remote expert data center; and  
updating the inventory of the medical component in the remote expert data center based upon the information identifying of the medical component.

30



45. The method of claim 44, wherein the step of transmitting information includes the further step of:

transmitting bar code information identifying the medical component  
implanted in the patient to the remote expert data center.

46. The method of claim 44, wherein the step of transmitting information includes the further step of:

transmitting serial number information identifying the medical  
component implanted in the patient to the remote expert data  
center.

47. The method of claim 44, wherein the step of transmitting information includes the further step of:

transmitting model number information identifying the medical  
component implanted in the patient to the remote expert data  
center.

48. The method of claim 44, and further including the step of:  
transmitting location information regarding the location of the implant  
procedure to the remote expert data center.

49. The method of claim 44, and further including the step of:  
transmitting operator information regarding an implanting physician to  
the remote expert data center.

50. The method of claim 44, and further including the step of:  
transmitting timing information regarding a date and a time of the  
implantation of the implantable medical device system to the  
remote expert data center.

51. The method of claim 46, and further including the step of:  
transmitting the identifying information to an inventory management  
system; and  
5 controlling inventory of the medical component at the location of the  
implantation.

52. The method of claim 44, wherein the step of initiating an interface  
further including the step of:  
10 initiating a local area network communications link between the  
implantable medical device system and the remote expert data  
center.

53. The method of claim 44, wherein the step of initiating an interface  
further including the step of:  
15 initiating an internet communications link between the implantable  
medical device system and the remote expert data center.

54. The method of claim 44, wherein the step of initiating an interface  
further including the step of:  
20 initiating a telephone line communications link between the implantable  
medical device system and the remote expert data center.

55. The method of claim 44, wherein the step of initiating an interface  
further including the step of:  
25 initiating a satellite communications link between the implantable  
medical device system and the remote expert data center.

56. The method of claim 44, wherein the step of initiating an interface  
further including the step of:  
30

initiating a global positioning system communications link between the implantable medical device system and the remote expert data center.

5 57. The method of claim 44, wherein the step of initiating an interface further including the step of:

initiating at least two communication links between the programmer and the remote expert data center selected from the group of communication links consisting of a local area network link, an internet link, a telephone line link, a satellite link, a global positioning system link, and a combination thereof.

10 58. A system for remote invoicing of a medical component used in of an implantable medical device system upon implantation in a patient, the system comprising:

15 means for initiating an interface between the implantable medical device system and a remote expert data center located at a distal location relative to the implantable medical device system; means for transmitting information identifying the medical component implanted into the patient to the remote expert data center; and  
20 means for preparing an invoice for the medical component in the remote expert data center based upon the information identifying the medical component.

25 59. A system for remotely controlling inventory of a medical component of an implantable medical device system upon implantation in a patient, the system comprising:

means for initiating an interface between the implantable medical device system and a remote expert data center globally located

at a distal location relative to the implantable medical device system;

means for transmitting information identifying the medical component implanted into the patient to the remote expert data center; and

5 means for updating the inventory of the medical component in the remote expert data center based upon the information identifying of the medical component.